



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,685	12/14/2006	Ferdinand Hardinghaus	292318US0X PCT	7398
22850	7590	02/20/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			WANG, XIAOBEI	
			ART UNIT	PAPER NUMBER
			4181	
			NOTIFICATION DATE	DELIVERY MODE
			02/20/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,685	<b>Applicant(s)</b> HARDINGHAUS ET AL.	
	<b>Examiner</b> XIAOBEI WANG	<b>Art Unit</b> 4181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/5/2006. 4/6/2007. 2/25/2008.</u>                            | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 4181

## **DETAILED ACTION**

### ***Election***

In response to remarks filed January 9, 2009, applicant elected to prosecute the claims of Group 1, with traverse. The examiner has reviewed the applicant's arguments, and upon further consideration, withdrawn the restriction requirement.

### ***Status Report***

Claims 1-36 are pending and presented for prosecution.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: The structure of “formula (I)” (line 3) is critical or essential to the practice of the invention, but not included in the claim(s).

Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: The constituent “(A)” (line 2) is critical or essential to the practice of the invention, but not included in the claim(s).

Claim 7 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 4181

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 7 recites the broad recitation "anionic groups", and the claim also recites specific anionic groups, which are the narrower statements of the range/limitation.

Claim 36 recites the limitation "the stabilizing additive" in line 1. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-3, 17-28, 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardinghaus et al (WO 01/92157) in view of Amirzadeh-Asl et al (WO 01/058809).**

Art Unit: 4181

**The corresponding US documents are used for citation purposes (PGPub 2003/0124048 and 2004/0167251, respectively).**

Regarding claim 1, Hardinghaus teaches a micronized barium sulfate, which is particulate barium sulfate having diameter size of less than  $0.1\mu\text{m}$  (paragraph 6), that can be formed through the use of a dispersing agent (paragraph 22-23). The micronized barium sulfate is composed of small particles of barium sulfate, which fits the instant specification's definition of 'deagglomerated'.

Hardinghaus does not teach the use of a crystallization inhibitor, however Amirzadeh-Asl teaches that barium sulfate particles can be better dispersed with the use of an organic additive which covers the barium sulfate particles (abstract) to prevent agglomeration. The organic additive described in Amirzadeh-Asl is interpreted as being a crystallization inhibitor.

It would have been obvious at the time of invention to one of ordinary skill in the art to incorporate the organic additive (i.e., crystallization inhibitor) of Amirzadeh-Asl into the barium sulfate of Hardinghaus in order to make a better barium sulfate dispersion (abstract) through the use of this organic additive as disclosed by Amirzadeh-Asl.

Regarding claim 2, Hardinghaus teaches that the barium sulfate particles are smaller than  $0.1\mu\text{m}$  (paragraph 6), and does not suggest that these particles coalesce to form larger agglomerates. It is reasonable to assume any secondary particles which form are included in this figure, and so the secondary particles are smaller than 250nm.

Regarding claim 3, Amirzadeh-Asl teaches that the organic additive can be a carboxylic acid, alcohols, or sulfoxides (paragraph 12). These chemicals have anionic groups in the form of carboxylates, hydroxyls, and sulfinyls.

Art Unit: 4181

Regarding claim 17, neither Hardinghaus nor Amirzadeh-Asl specifically disclose the amount of crystallization inhibitor or dispersant present in the deagglomerated barium sulfate, however, in view of the known function of the crystallization inhibitor, it would have been obvious to one of ordinary skill in the art to arrive, through routine optimization, at a weight ratio that would make a desirable deagglomerated barium sulfate.

Regarding claim 18, Amirzadeh-Asl discloses that the barium sulfate is ground in a mill while coated with the organic additive, and Hardinghaus teaches that the dispersant may be added during precipitation (paragraph 21). Since Hardinghaus teaches a possible way of preparing the deagglomerated barium sulfate, it would have been obvious to one of ordinary skill in the art at the time of invention also to carry out precipitation with the simultaneous addition of a crystallization inhibitor.

Regarding claim 19, Amirzadeh-Asl discloses the deagglomerated barium sulfate in an aqueous suspension (paragraph 17).

Regarding claim 20, Amirzadeh-Asl teaches barium sulfate suspensions wherein the barium sulfate is present in a concentration of 250g/L in a water suspension. This is approximately 50% by weight (paragraphs 21).

Regarding claim 21, Hardinghaus teaches that a finished dried product of coated barium sulfate which can be redispersed in pigments, rubber articles, and adhesives (paragraphs 40-43).

Regarding claim 22-23, Hardinghaus teaches that the crystallization inhibitor may be added during precipitation or after precipitation (paragraph 21), and that the average particle size is smaller than 0.1  $\mu\text{m}$ .

Art Unit: 4181

Regarding claim 24, Hardinghaus teaches that the deagglomerated barium sulfate may be subsequently 'kneaded' (paragraph 26), and redispersed in solvents or the base materials for adhesives or pigments (paragraph 28). Solvents are organic liquids.

Regarding claim 25-27, Amirzadeh-Asl teaches that the deagglomerated barium sulfate may be used in the production of plastics compositions, thermoplastics, elastomers, and adhesives (paragraph 19).

Regarding claim 28, Amirzadeh-Asl teaches processes wherein deagglomerated barium sulfate is used in making a polyethylene terephthalate film (paragraph 31-32). This is read to be a curable composition involving a polymer and deagglomerated barium sulfate, since polyethylene is a curable polymer.

Regarding claim 33, Hardinghaus teaches the barium sulfate particles are smaller than  $0.1\mu\text{m}$  (paragraph 6). This would include any primary particles which form.

Regarding claim 34, Hardinghaus teaches that the barium sulfate particles are smaller than  $0.1\mu\text{m}$  (paragraph 6). This would include any secondary particles which form, and so the secondary particles are smaller than 250 nm.

Regarding claim 35, Amirzadeh-Asl teaches making deagglomerated barium sulfate wherein the crystallization inhibitor is present in an amount of either 1% or 5% by weight compared to barium sulfate (paragraphs 23-26). Hardinghaus teaches the use of a dispersant using a 3% by weight amount of dispersant compared to barium sulfate (paragraph 24).

**Claims 4-10, 12-13, 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardinghaus et al (WO 01/92157) in view of Amirzadeh-Asl et al (WO 01/058809), as applied to claim 1 above, further in view of D'Muhala (US Patent 4,708,805).**

Art Unit: 4181

Regarding claim 4, Amirzadeh-Asl discloses that the organic additive can be a carboxylic acid (paragraph 12), but does not provide examples as to the specific types of carboxylic acids.

D'Muhala teaches the use of specific chemicals which prevent the deposition of barium sulfate scales, and remove barium sulfate scales, deposits, and crystals from surfaces (column 1, lines 7-13). The effect of these chemicals is clearly to inhibit the formation of crystals.

D'Muhala further teaches the use of citric acid, which has two carboxylate groups as a crystallization inhibitor (column 2, lines 52-63).

Thus, it would have been obvious at the time of invention to one of ordinary skill in the art to use the known crystallization inhibitors of D'Muhala in the process of Hardinhaus in view of Amirzadeh-Asl in order to achieve the expected crystallization inhibition results.

Regarding claim 5, citric acid anticipates the structure disclosed.

Regarding claim 6, citric acid contains two carboxylate groups and one hydroxyl group.

Regarding claim 7, Hardinghaus discloses that the dispersing agents may be sulfonates, which contain anionic groups (paragraph 23).

Regarding claim 8, the dispersing agents or crystallization inhibitors disclosed in Hardinghaus, Amirzadeh-Asl, and D'Muhala all prevent reagglomeration or inhibit agglomeration either electrostatically or sterically, as an inherent feature of the dispersing agent or crystallization inhibitor.

Regarding claims 9-10, D'Muhala teaches the use of polycarbazic acid as part of a chemical composition for preventing the formation of barium sulfate scale (column 4, lines 21-41). This polycarbazic acid has carboxylate groups, and has organic radicals of two carbon atom



Art Unit: 4181

chains containing hydrophobic moieties (the carbon chains) and hydrophilic moieties (the carboxylate and amine groups).

Regarding claim 12, hydroxyl and amine groups can be used for coupling to or into polymers, as evidenced by natural polymers such as amino acids and polysaccharides, which are coupled by amine groups and hydroxyl groups, respectively.

Regarding claim 13, the polycarbazic acid of D'Muhala has polar groups such as carboxylates and hydrophilic groups, such as amines (column 4, lines 21-41).

Regarding claim 29 and 32, Hardinghaus in view of Amirzadeh-Asl discloses precipitating barium sulfate with crystallization inhibitor incorporated during precipitation (paragraph 21, Hardinghaus), and that the resulting barium sulfate particle has a particle size of less than 50 nm (paragraph 27, idem). Hardinghaus in view of Amirzadeh-Asl do not disclose the specific crystallization inhibitor of the instant claim.

D'Muhala teaches citric acid can be used to sequester barium sulfate (column 3, lines 44-46), which is used to prevent the accumulation of barium sulfate as a precipitate, i.e. a crystallization inhibitor (abstract).

It would have been obvious at the time of invention to one of ordinary skill in the art to use chemicals known to be crystallization inhibitors in the process of Hardinghaus in view of Amirzadeh-Asl.

Regarding claim 30, Hardinghaus teaches a process resulting in deagglomerated barium sulfate wherein the barium sulfate has average particle size of 30 nm (paragraph 40-42).

Regarding claim 31, Hardinghaus teaches a process resulting in a deagglomerated barium sulfate wherein the barium sulfate has a surface area of 48 m<sup>2</sup>/g.

Art Unit: 4181

Regarding claim 36, D'Muhala teaches that citric acid, a carboxylic acid, can be used as a crystallization inhibitor (abstract).

**Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hardinghaus et al (WO 01/92157) in view of Amirzadeh-Asl et al (WO 01/058809) and D'Muhala (US Patent 4,708,805) as applied to claim 9 above, further in view of Bunnomori et al (US Patent 4,032,479).**

Regarding claim 11, Hardinghaus in view of Amirzadeh and D'Muhala do not teach using a dispersant that is a phosphoric diester having a polyether group and a C6-C10 alkenyl group as moieties.

Bunnomori teaches a composition comprising a reinforcing agent or filler, such as barium sulfate, in the presence of a softener or plasticizer such as an ester of phosphoric acid (column 6, lines 28-35). It is the examiner's position that the presence of such an ester of phosphoric acid would function as a dispersant.

It would have been obvious to one of ordinary skill in the art at the time of invention to apply any type of phosphoric acid ester as a dispersant in the process of Hardinghaus in view of Amirzadeh and D'Muhala, because Bunnomori does not specify a certain type of phosphoric acid ester, and any type of phosphoric acid ester would play the same role as a dispersant.

**Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardinghaus et al (WO 01/92157) in view of Amirzadeh-Asl et al (WO 01/058809) and D'Muhala (US Patent 4,708,805), as applied to claim 13 above, further in view of Pirrung et al (US PGPub 2004/0236007).**

Art Unit: 4181

Regarding claim 14, Hardinghaus in view of Amirzadeh-Asl and D'Muhala do not disclose a dispersant having polyether groups substituted by hydroxyl or amino groups.

Pirrung teaches barium sulphate in a dispersant such as polyether derivatives (paragraph 64).

Since dispersants containing amino and hydroxyl groups are also known in the art to be useful as dispersants for barium sulfate, it would have been obvious at the time of invention to one of ordinary skill in the art to use a polyether derivative containing such moieties as a dispersant for barium sulfate, as is known in the art (D'Muhala, column 4, lines 21-28).

Regarding claim 15, hydroxyl and amino groups inherently can function as reactive groups for coupling into epoxides.

Regarding claim 16, it would have been obvious at the time of invention to one of ordinary skill in the art to combine the properties of dispersants in D'Muhala, which teaches polycarboxylates (column 4, lines 21-41), and in Pirrung, which teaches polyether derivatives (paragraph 64) to use a chemical that is a polyether derivative with carboxylates as a dispersant. The polycarboxylate of D'Muhala is also terminated with hydroxyl groups.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

Art Unit: 4181

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1-17, 19-21, 25-30, 32, 34, 36 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 10/596,007.** Although the conflicting claims are not identical, they are not patentably distinct from each other because they both are directed towards a deagglomerated barium sulfate containing a dispersant and crystallization inhibitor.

Regarding claims 1 and 25-28, claim 1 of '007 discloses a curable composition comprising deagglomerated barium sulfate containing at least one dispersant, one crystallization inhibitor, and the primary particle size is smaller than 0.5 $\mu$ m. Claim 1 of the instant application is directed towards deagglomerated barium sulfate containing a dispersant and a crystallization inhibitor, wherein the primary particle size is smaller than 0.5 $\mu$ m, while claims 25-28 are directed towards plastics and other curable compositions.

Regarding claim 2, the size of the secondary particle is obvious over claim 1.

Claims 5, 6, 8, 10, 11 correspond to claims 2, 4, 5, 3, 6, respectively, of '007 almost word for word. Claim 3-4, 7, 9, 13 are obvious over claim 2 of '007 because carboxylate groups are anionic, and '007 discloses that there are may be a number of carboxylate groups, which are hydrophilic moieties.

Regarding claims 12 and 15, claim 7 of '007 discloses that hydroxyl or amino groups can be reactive groups for covalent bonds. Polymeric links and epoxide links are by nature, covalent.

Art Unit: 4181

Regarding claim 14 and 16, claim 9 of '007 discloses a polyetherpolycarboxylate substituted terminally by hydroxyl groups.

Regarding claim 17, it would have been obvious to one of ordinary skill in the art to arrive, through routine optimization, at a weight ratio that would make a desirable deagglomerated barium sulfate.

Claim 19 correspond to claim 10 of '007. Claim 14 of '007 discloses a range within the range of instant claim 20. Claim 24 of the instant application is obvious over claim 10 of '007 in that both disclose preparing a aqueous suspension containing barium sulfate. Claim 21 is obvious over claim 11 of '007 in discussing a dry, deagglomerated barium sulfate.

Regarding claim 29 differs from claim 2 of '007 in that the instant claim does not disclose a dispersant, however the disclosure relating to the crystallization is almost identical.

Regarding claims 30 and 32, claim 1 of '007 discloses that the barium sulfate is preferably less than 0.1 $\mu$ m, and more preferably, less than 30nm.

Regarding claim 34, of the secondary particle is obvious over claim 1.

Regarding claim 36, claim 2 discloses carboxylic acids may be present in the deagglomerated barium sulfate.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

**Claims 1-14, 16-18, 20, 22, 23, 25-28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 32-49 of copending Application No. 11/916408.** Although the conflicting claims are not identical, they

Art Unit: 4181

are not patentably distinct from each other because they both are directed towards a deagglomerated barium sulfate containing a dispersant and crystallization inhibitor.

Regarding claims 1, 20 and 25-28, claim 32 of '408 discloses a plastics premix or a plastics comprising deagglomerated barium sulfate containing a dispersant, a crystallization inhibitor, and the primary particle size is smaller than  $0.5\mu\text{m}$ , wherein 0.1 to 70% by weight of the primary particles contain barium sulfate. Claim 1 of the instant application is directed towards deagglomerated barium sulfate containing a dispersant and a crystallization inhibitor, wherein the primary particle size is smaller than  $0.5\mu\text{m}$ , while claims 25-28 are directed towards plastics and other curable compositions.

Claim 2 corresponds to claim 33 of '408 almost word for word.

Claims 3 and 4 correspond to claim 34 of '408 disclosing the crystallization inhibitor contains anionic groups such as sulfates, phosphates, and carboxylates.

Claims 5-7, 9-12 correspond to claims 35-40, 43 of '408 almost word for word. Claim 8 is obvious because a dispersant containing the groups delineated in claim 35 would inhibit agglomeration sterically or electrostatically. Claim 13 is obvious because a dispersant containing the groups delineated in claim 35 are polar groups and hydrophobic.

Claims 14 and 16 are obvious over claim 44 of '408, which discloses a polyether polycarboxylate substituted terminally by hydroxyl groups.

Claim 17 corresponds to claim 45 of '408.

Claim 18 and 22 are obvious over claim 46 of '408, which discloses precipitating barium sulfate in the presence of a dispersant and a crystallization inhibitor.

Art Unit: 4181

Claim 20 is obvious of claim 55 of '408 which discloses a range within the range specified in the instant claim.

Regarding claim 23, the size of the secondary particle is obvious over claim 1 of '408.

Claims 25-28 are also obvious over claims 47-54 of '408, in that the instant claims are directed towards deagglomerated barium sulfate in plastics, while claims 47-54 are also directed towards deagglomerated barium sulfate in plastics containing specific chemicals.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These citations are all directed towards barium sulfate in a dispersant or a crystallization inhibitor.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAOBEI WANG whose telephone number is (571)270-5764.

The examiner can normally be reached on Monday - Friday, 8:00am - 5:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4181

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/  
Supervisory Patent Examiner, Art Unit  
1793

/X. W./  
Examiner, Art Unit 4181